

AMENDMENTS TO THE CLAIMS

1 1. (currently amended) A continuous renal replacement therapy device, ~~adapted to~~
2 ~~enable a patient to wear the whole device,~~ comprising:

3 at least one dialyzer that utilizes a dialysate to remove impurities from the blood
4 ~~of the a patient;~~

5 a microprocessor ~~adapted~~ configured to control a rate of ultrafiltration that excess
6 ~~fluid is removed from said dialysate while at the same time~~ said at least one dialyzer is utilizing
7 ~~the at least one dialyzer to remove removing~~ impurities from the blood, wherein the device is
8 configured to allow concurrent ultrafiltration and dialysis; and

9 at least one dialysate sorbent device for regenerating the dialysate, the entire
10 continuous renal replacement device for being worn on the patient.

1 2. (previously presented) The continuous renal replacement therapy device of claim
2, wherein the at least one dialyzer is connected in series with at least one additional dialyzer.

1 3. (previously presented) The continuous renal replacement therapy device of claim
2, wherein at least one of the dialyzers comprises a plurality of cylindrical hollow fibers,
3 wherein the patient's blood is circulated within the hollow fibers in a first direction and wherein
4 the dialysate is circulated around at least a portion of the exterior walls of the hollow fibers in a
5 second direction.

1 4. (original) The continuous renal replacement therapy device of claim 3, wherein
2 the exterior walls of the hollow fibers are semiporous so that impurities can be moved from the
3 blood and into the dialysate.

1 5. (previously presented) The continuous renal replacement therapy device of claim
2 1, wherein each of the at least one dialyzers have a flexible casing adapted to conform to the
3 body contour of the patient.

1 6. (previously presented) The continuous renal replacement therapy device of claim
2 1, wherein the number of dialyzers in the at least one dialyzer may be varied to reflect different
3 dialysis prescriptions.

1 7. (previously presented) The continuous renal replacement therapy device of claim
2 1, further including a blood inlet tube leading into a first dialyzer of the at least one dialyzer and
3 a blood outlet tube leading out of a last dialyzer of said at least one dialyzer such that the at least
4 one dialyzers are connected in series.

1 8. (original) The continuous renal replacement therapy device of claim 7, wherein
2 the blood inlet tube includes a side port for the infusion of anticoagulants into the blood.

1 9. (original) The continuous renal replacement therapy device of claim 8, wherein
2 the anticoagulant is chosen from the group consisting of: heparin, prostacyclin, low molecular
3 weight heparin, hirudin and sodium citrate.

1 10. (previously presented) The continuous renal replacement therapy device of claim
2 7, wherein the blood outlet tube includes a side port adapted for an infusion of at least one
3 additive.

1 11. (previously presented) The continuous renal replacement therapy device of claim
2 10, wherein the at least one additive can be pumped into the blood by a plurality of additive
3 pumps.

1 12. (previously presented) The continuous renal replacement therapy device of claim
2 11, wherein the rate of infusion of said at least one additive is controlled electronically.

1 13. (previously presented) The continuous renal replacement therapy device of claim
2 10, wherein said at least one additive is chosen from the group consisting of: sodium citrate,
3 calcium, potassium and sodium bicarbonate.

1 14. (previously presented) The continuous renal replacement therapy device of claim
2 1, wherein the at least one sorbent device comprises a plurality of sorbent devices connected in
3 series.

1 15. (previously presented) The continuous renal replacement therapy device of claim
2 1, wherein the at least one sorbent device comprises a plurality of sorbent devices connected in
3 parallel.

1 16. (previously presented) The continuous renal replacement therapy device of claim
2 1, wherein the at least one dialyzer is connected in parallel with at least one additional dialyzer.

1 17. (previously presented) The continuous renal replacement therapy device of claim
2 1, wherein at least one of said at least one dialyzer comprises a plurality of parallel sheets of
3 semiporous material, wherein the patient's blood is circulated on one side of the parallel sheets
4 in a first direction and wherein the dialysate is circulated on the other side of the parallel sheets
5 in a second direction.

1 18. (currently amended) A continuous renal replacement therapy device, ~~adapted to~~
2 enable a patient to wear the whole device, comprising:

3 at least one dialyzer that utilizes a dialysate to remove impurities from the blood
4 of ~~the~~ a patient;

5 a microprocessor ~~adapted programmed~~ to control a rate that excess fluid is
6 removed from dialysate while said at least one dialyzer is ~~removing utilizing the dialysate to~~
7 remove impurities from the blood, ~~wherein the device is programmed to allow concurrent~~
8 ultrafiltration and dialysis; and

9 a plurality of dialysate sorbent devices for regenerating the dialysate wherein a
10 first sorbent device contains a first sorbent and a second sorbent device that contains a second
11 sorbent; said first sorbent and said second sorbent being different compounds, said entire
12 continuous renal replacement device to be worn on the patient.

1 19. (previously presented) The continuous renal replacement therapy device of claim
2 18, wherein the plurality of sorbent devices are connected at least in series.

1 20. (original) The continuous renal replacement therapy device of claim 18, wherein
2 each of the sorbent devices has a flexible casing adapted to conform to the body contour of the
3 patient.

1 21. (previously presented) The continuous renal replacement therapy device of claim
2 18, wherein the number of sorbent devices may be varied to reflect different dialysis
3 prescriptions.

1 22. (original) The continuous renal replacement therapy device of claim 18, further
2 including a regenerated dialysate inlet tube leading into the at least one dialyzer and a spent
3 dialysate outlet tube leading out of the at least one dialyzer.

1 23. (previously presented) The continuous renal replacement therapy device of claim
2 22, wherein the regenerated dialysate inlet tube includes a side port for an infusion of at least one
3 additive.

1 24. (previously presented) The continuous renal replacement therapy device of claim
2 23, wherein the at least one additive is pumped into the dialysate from a plurality of additive
3 reservoirs.

1 25. (previously presented) The continuous renal replacement therapy device of claim
2 24, wherein the rate of infusion of each one of the at least one additive is controlled
3 electronically.

1 26. (previously presented) The continuous renal replacement therapy device of claim
2 23, wherein the at least one additive is chosen from the group consisting of: sodium citrate,
3 calcium, potassium and sodium bicarbonate.

1 27. (original) The continuous renal replacement therapy device of claim 22, wherein
2 the spent dialysate tube leads into the plurality of sorbent devices and the regenerated dialysate
3 tube leads out of the plurality of sorbent devices.

1 28. (previously presented) The continuous renal replacement therapy device of claim
2 19, wherein the series of sorbent devices comprises a series of replaceable cartridges.

1 29. (previously presented) The continuous renal replacement therapy device of claim
2 28, wherein the replaceable cartridges include at least one of: activated charcoal, urease,
3 zirconium phosphate, hydrous zirconium oxide and activated carbon.

1 30. (previously presented) The continuous renal replacement therapy device of claim
2 18, wherein the at least one sorbent device comprises a plurality of sorbent devices connected in
3 parallel.

1 31. (previously presented) The continuous renal replacement therapy device of claim
2 18, wherein the at least one dialyzer comprises a plurality of dialyzers connected in parallel.

1 32. (previously presented) The continuous renal replacement therapy device of claim
2 18, wherein the at least one dialyzer comprises a plurality of dialyzers connected in series.

1 33. (previously presented) The continuous renal replacement therapy device of claim
2 32, wherein at least one of the at least one dialyzer comprises a plurality of parallel sheets of
3 semiporous material, wherein the patient's blood is circulated on one side of the parallel sheets
4 in a first direction and wherein the dialysate is circulated on the other side of the parallel sheets
5 in a second direction.